



IFW

Docket No.: GAS-013

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Inventor(s): Manfred RENKEL et al.

U.S. Patent Application No. 10/574,660

Filed: April 4, 2006

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: Confirmation No.
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: Group Art Unit:
:
: Examiner:

For: TOOL FOR PRODUCING CAST COMPONENTS, METHOD FOR PRODUCING
SAID TOOL, AND METHOD FOR PRODUCING CAST COMPONENTS

**SUBMISSION OF TRANSLATION OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY ISSUE BY PCT**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith is a TRANSLATION OF INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY ISSUE BY PCT (Form PCT/IPEA/409).

Respectfully submitted,

KANESAKA BERNER AND PARTNERS Patent Agents, LLP

Manabu Kanesaka
Registration No. 31,467

1700 Diagonal Road, Suite 310
Alexandria, Virginia 22314
(703) 519-9785 MAN/yok
Facsimile: (703) 519-7769
Date: September 28, 2006

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P802245/WO/1	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/DE2004/002106	International filing date (day/month/year) 23.09.2004	Priority date (day/month/year) 09.10.2003
International Patent Classification (IPC) or national classification and IPC B22C9/04, B22C1/04		
Applicant G4T GMBH		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 9 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☒ (sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:

☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☒ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input checked="" type="checkbox"/>	Box No. VII	Certain defects in the international application
<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/DE2004/002106

Box No. 1 Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
 - ☐ international search (Rule 12.3 and 23.1(b))
 - ☐ publication of the international application (Rule 12.4)
 - ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
 - ☐ the international application as originally filed/furnished
 - ☒ the description:
 - pages 1-6 _____ as originally filed/furnished
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____
 - ☒ the claims:
 - nos. 1-12 _____ as originally filed/furnished
 - nos.* _____ as amended (together with any statement) under Article 19
 - nos.* _____ received by this Authority on _____
 - nos.* _____ received by this Authority on _____
 - ☒ the drawings:
 - sheets 1/1 _____ as originally filed/furnished
 - sheets* _____ received by this Authority on _____
 - sheets* _____ received by this Authority on _____
 - ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☐ the claims, nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____
4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☒ the claims, nos. 1-3, 4-5 _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/DE2004/002106

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability:
citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 4, 10, 12	YES
	Claims 1-3, 5-9, 11	NO
Inventive step (IS)	Claims	YES
	Claims 1-12	NO
Industrial applicability (IA)	Claims 1-12	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents:

D1: PATENT ABSTRACTS OF JAPAN, vol. 009, no. 128
(M-384), 4 June 1985 (1985-06-04)
& JP 60 012247 A (KOGYO GIJUTSUIN; others: OJ),
22 January 1985 (1985-01-22)

D2: US-A-4 557 316 (TAKAYANAGI ET AL)
10 December 1985 (1985-12-10)

D3: EP-A-0 554 198 (HOWMET CORPORATION; UNITED
TECHNOLOGIES CORPORATION)
4 August 1993 (1993-08-04)

D4: US-A-5 944 088 (FEAGIN ET AL)
31 August 1999 (1999-08-31).

2. **Novelty:**

The present application fails to satisfy the requirements of PCT Article 33(1) because the subject matter of claims 1-3, 5-9 and 11 lacks novelty (PCT Article 33(2)). Documents D1 and D2 disclose a casting mould made of yttrium oxide, magnesium oxide and calcium oxide.

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability:
citations and explanations supporting such statement

All the other features are logical, conventional procedures for producing a precision casting mould or features of a precision casting mould, and are known to every person skilled in the art. Consequently, claims 1-3, 5 and 6-9 and 11 cannot be considered novel.

In addition, said claims cannot be considered novel because claims 6-9 describe the method whilst claim 11 describes the use of the casting mould and said claims do not contain any additional features that have not already been disclosed in D1 or D2 or even that are not generally known.

3. **Inventive step:**

Document D1, considered to be the closest prior art, discloses (see the abstract) a casting mould, from which the subject matter of claims 4 and 10 differs in that less yttrium oxide is required in the second layer. Although this is not explicitly disclosed in any of the prior art documents, reducing the yttrium oxide content in the support layer is nevertheless obvious, since this would give rise to unnecessarily high costs in the production and preparation of the shell moulds.

In consequence, said claims do not involve an inventive step (PCT Article 33(3)).

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability:
citations and explanations supporting such statement

The subject matter of claim 12 is described in document D3. For a person skilled in the art, it is obvious to combine the teachings of D1 or D2 with that of D3 in order to arrive at the desired result. Therefore, claim 12 does not involve an inventive step (PCT Article 33(3)).

4. Industrial applicability:

Since the casting mould and the method for producing cast pieces can be used in the casting industry, the invention is industrially applicable.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Contrary to PCT Rule 5.1(a)(ii), the description does not cite documents D1 to D4 or indicate the relevant prior art disclosed therein.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. VIII

Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

- a. The application fails to satisfy the requirements of PCT Article 5 because the invention is not disclosed in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art.

It is not clear what amounts of yttrium oxide have to be present in the two layers for the effect according to the description, namely that of a high heat capacity, to be obtained (see the description page 5, third paragraph).

It is also unclear to the Examining Authority how a "high heat capacity" in layer (15) is intended to result in a "slow cooling" of the metal. In general, "high heat capacities (for example chillers)" are used to achieve **rapid** cooling.

- b. Claims 1, 2, 6 and 11 fail to comply with PCT Article 6.

According to PCT Article 6, the claims must be drafted in a concise manner. The expression "in particular" in claims 1, 6 and 11 does not restrict the scope of protection of the claim, that is to say that any feature preceded by an expression of this kind must be considered entirely optional.

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. VIII Certain observations on the international application

- c.) Claims 1-5 are not concise and therefore fail to comply with PCT Article 6.

The subject matter of claim 1 appears to be a tool. In line 3, this is restricted to a casting mould. The following wording would satisfy the requirement of PCT Article 6: "a casting mould for the production of cast components from reactive molten non-ferrous metal etc."

- d.) The substantive matter according to claim 2 is already included in claim 1, and claim 2 therefore appears to be superfluous.

- e.) The relationship of claim 1 to claims 6 to 10 lacks clarity since claims 6-10 concern a method and not a casting mould.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Box I: Basis of the report

The amendments submitted with the letter of 9 August 2005 introduce substantive matter which, contrary to PCT Article 34(2)(b), goes beyond the disclosure in the international application as filed. The amendments are as follows:

in the application as filed, it was a condition that the second layer (15), which back-fills the first layer (14), contains less yttrium oxide and is more coarse-grained than the first layer.

According to claims 1 and 4 as submitted with the letter of 9 August 2005, this is not the case and said claims therefore fail to comply with PCT Article 34(2)(b).

Claims 6 and 7 correspond to the original claims 11 and 12.

Therefore, for the purpose of establishing an expert opinion in respect of novelty and inventive step, reference has been made to the application as originally filed.